

Rec'd PCT/PTO 06 MAY 1998

FORM PTO 1390
(REV. 5-93)

US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NUMBER
766/X89029/IN-AB/ma

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. §371

U.S. APPLICATION NO.

097 068238

International Application No.
PCT/IT96/00202

International Filing Date
4 November 1996

Priority Date Claimed
6 November 1995

Title of Invention
WINDOW WITH GLAZING PROFILE

Applicant(s) For DO/EO/US
Udo NOBEL et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. §371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. §371.
 - ☐ This express request to begin national examination procedures (35 U.S.C. §371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. §371(b) and PCT Articles 22 and 39(1).
 - ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
 - ☒ A copy of the International Application as filed (35 U.S.C. §371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau). Attachment A
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
 - ☐ A translation of the International Application into English (35 U.S.C. §371(c)(2)).
 - ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3)).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
 - ☐ An oath or declaration of the inventor(s) (35 U.S.C. §371(c)(4)).
 - ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. §371(c)(5)).

Items 10. to 13. below concern other document(s) or information included:

10. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. Attachment B
11. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
12. ☒ A **FIRST** preliminary amendment. Attachment C
 - ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
13. ☒ Other items or information:
 - Attachment D - International Search Report
 - Attachment E - Written Opinion
 - Attachment F - Reply
 - Attachment G - International Preliminary Examination Report

RECEIVED
MAY 11 1998
FOR DEPOSIT
ACCOUNT NO. 25-0975

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) To be assigned		INTERNATIONAL APPLICATION NO. PCT/IT96/00202		ATTORNEY'S DOCKET NO. 766/X89029/IN-AB/ma	
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17. <input checked="" type="checkbox"/> The following fees are submitted BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): <input checked="" type="checkbox"/> Search Report has been prepared by the EPO or JPO..... \$ 930.00 <input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO..... \$1,070.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">CALCULATIONS</td> <td style="width: 50%;">PTO USE ONLY</td> </tr> <tr><td colspan="2" style="height: 40px;"></td></tr> <tr><td>\$930.00</td><td></td></tr> <tr><td>\$930.00</td><td></td></tr> </table>		CALCULATIONS	PTO USE ONLY			\$930.00		\$930.00	
CALCULATIONS	PTO USE ONLY												
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Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$930.00									
Claims	Number Filed	Number Extra	Rate										
Total Claims	27 -20 =	7	X \$22.00	\$154.00									
Independent Claims	4 - 3 =	1	X \$82.00	\$82.00									
Multiple dependent claim(s) (if applicable)			+ \$270.00	\$									
TOTAL OF ABOVE CALCULATIONS =				\$1,166.00									
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed. Note 37 CFR 1.9, 1.27, 1.28)				\$									
SUBTOTAL =				\$1,166.00									
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+ \$									
TOTAL NATIONAL FEE =				\$1,166.00									
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40 per property				+ \$									
TOTAL FEES ENCLOSED =				\$1,166.00									
				Amount to be refunded	\$								
				Amount to be charged	\$								

[X] A check in the amount of \$1,166.00 to cover the above fees is enclosed. A duplicate copy of this form is enclosed.

b. ☐ Please charge my Deposit Account No. 23-0975 in the amount of \$_____ to cover the above fees.
A duplicate copy of this sheet is enclosed.

c. ☐ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 23-0975. A duplicate copy of this form is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

WENDEROTH, LIND & PONACK, L.L.P.
 2033 K St., N.W., Ste. 800
 Washington, D.C. 20006

SIGNATURE

Nils E. Pedersen
 NAME

33,145
 REGISTRATION NUMBER

[CHECK NO. 28354]

May 6, 1998

1. ~~RECEIVED~~ Rec'd PCT/PTO 06 MAY 1998

In re application of	:	Attn: APPLICATION BRANCH
Udo NOBEL et al.	:	Docket No.: 766/X89029
Serial No. [Not Yet Assigned]	:	
Filed May 6, 1998	:	
WINDOW WITH GLAZING PROFILE	:	

Assistant Commissioner for Patents,
Washington, D.C.

Kindly amend the above-identified application as follows.

Please amend claims 3-6, 12, 14, 15, 17, 21, and 25 as follows:

In claim 15, line 1, change "any preceding claim" to --claim

THE COMMISSIONER IS AUTHORIZED
TO CHARGE ANY DEFICIENCY IN THE
FEE FOR THIS PAPER TO DEPOSIT
ACCOUNT NO. 23-0975.

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1--.

In claim 17, line 1, delete "any preceding".

line 2, after "claim" insert --1--.

In claim 21, line 1, change "any one of claims" to --claim 18--.

line 2, delete "to 20".

In claim 25, delete "or 24".

Please add the following new claim:

27. A glazing profile as claimed in claim 16.

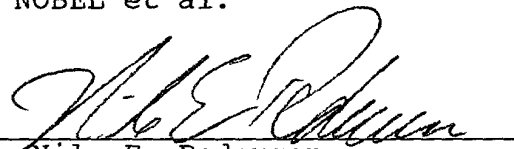
REMARKS

The present Preliminary Amendment is submitted to delete the multiple dependency of the claims, thereby placing such claims in condition for examination and reducing the required PTO filing fee.

Respectfully submitted,

Udo NOBEL et al.

By



Nils E. Pedersen
Registration No. 33,145
Attorney for Applicants

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WENDEROTH, LIND & PONACK, L.L.P.
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Telephone (202) 721-8200
May 6, 1998

WINDOW WITH GLAZING PROFILEDESCRIPTIONTechnical Field

5 The present invention relates to a window with a glazing profile, to a glazing for the window, and also to the glazing profile itself. The window may be for a vehicle, and further aspects of the invention relate to methods of glazing a window in a vehicle, and of centring the glazing relative to an aperture in a vehicle body.

10 Vehicle windows are often glazed by direct bonding, i.e. an adhesive material is used to attach the glazing to the vehicle body. This method allows flush glazing (i.e. the outer surface of the window is flush with the vehicle body) or near-flush glazing, and, as well as
15 improving the product, may reduce assembly costs because it lends itself to automation using robots.

The deployment of robots for this task is greatly facilitated if the glazing self-centres as it is inserted in the aperture. Accurate centring is especially
20 important when the glazing is to be flush glazed without a trim strip covering the gap between the edge of the glazing and the adjacent bodywork, because if the glazing is off-centre, the gap will vary in width around the perimeter of the glazing, which is aesthetically
25 undesirable.

Another consideration is to provide means for retaining the glazing in place while the adhesive material sets. There is obviously little point in
30 obtaining accurate centring of the glazing during its initial insertion in the aperture, if it slips out of position before the adhesive has set.

A further consideration is that the window should appear aesthetically acceptable from the inside of the vehicle as well as the outside. To this end separate trim
35 strips have been used to cover the mounting flange of the vehicle body, but assembly costs could be further reduced

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Background Art

A problem with these designs is that the distance which the lip may extend beyond the periphery of the glazing is limited by the tendency of the freshly extruded lip to sag and lose its shape before the polymer material of which the lip is composed has set.

US 5,384,995 seeks to address this problem by providing the lip with a supporting release film in contact with each face of the lip. Once the polymer has set, the films are removed by pulling them off the lip. However, the use of such films adds to the cost and complexity of manufacture of the glazing.

Furthermore, all these centring lips suffer from the disadvantage that they are exposed in service to the effects of weathering, in particular UV radiation present in sunlight. This causes deterioration of the polymer material well before the normal service life of the vehicle has elapsed, leading to formation of a black residue, resulting in a generally unattractive appearance. Unfortunately, those polymer materials which resist weathering better are also harder to process during the initial manufacture of the window.

These centring lips are also vulnerable to damage before and during installation of the glazing, and do not allow the "trimless" glazing techniques preferred by some vehicle manufacturers, in which no trim profile is visible between the glazing and the adjacent bodywork.

Moreover, they are not capable of retaining the glazing in position while the adhesive sets, or of covering part of the mounting flange from internal view.

5 Different embodiments of spacer are also disclosed in Figs 3 and 4 of US 5,384,995 which do immobilize the glazing while the adhesive material sets. However, these embodiments do not centre the glazing, and as centring is becoming increasingly required, recourse to one of the known centring lips would be necessary to fulfil the
10 centring requirement, which would then entail the disadvantages associated therewith.

There is therefore a need for a glazing profile, capable of centring a glazing, which is protected from weathering and from accidental damage and is relatively
15 cheap and easy to manufacture. Preferably the profile should allow trimless glazing if desired, and it should also retain the glazing in position while any adhesive material sets.

There is also a need for a glazing profile which can
20 also serve as part of the internal trim of the vehicle. Again, it would be preferable if the profile were able to perform this function in combination with the centring and retaining functions mentioned above.

Disclosure of the Invention

25 It has now been found that it is possible to provide a window with such a profile. By designing the profile to act on the inner edge of a mounting flange, instead of on a distance portion of the flange which spaces the parallel portion of the flange from the outside surface
30 of the vehicle body, it has become possible to provide a glazing profile including a functional element which not only centres the glazing, but can, if desired, perform retaining and trimming functions as well or instead, and which does not suffer from the disadvantages of the prior
35 art.

According to the present invention there is provided a window for a vehicle, comprising a glazing including an

5 elastomeric glazing profile disposed around at least part
of its periphery on a margin of a face of the glazing,
and a mounting flange having an inner edge defining an
aperture in a vehicle body, the glazing being inserted in
the aperture from outside the vehicle body, characterised
in that the profile includes a raised portion shaped and
positioned to centre the glazing within the aperture
during insertion in the aperture by bearing against the
inner edge of the mounting flange, and the glazing is
10 bonded to the mounting flange by an adhesive material.

This window has the advantage that the centring
element of the profile is not exposed to the weather or
to UV radiation. Indeed, in many embodiments of the
invention, the whole profile is protected from these
15 harmful agents. The functional element of the profile is
also better protected from accidental damage, allows
trimless glazing if desired and may be adapted to perform
additional functions as described below.

The term "inner" is intended here to mean "towards
20 the centre of the aperture", and "edge" is to be
interpreted as including any narrow face in which the
mounting flange terminates as well as a meeting-line of
such a face with one of the major faces of the mounting
flange.

25 Preferably, the profile includes a raised portion in
the form of a lip extending away from the glazing which,
after insertion of the glazing in the aperture, extends
beyond the edge of the mounting flange of the vehicle
body and over the face of the mounting flange which faces
30 away from the glazing.

The glazing profile of this version of the window may
eliminate the need for a separate piece of interior trim,
thereby simplifying the assembly of the vehicle and
reducing the manufacturing costs of the vehicle, while
35 improving the aesthetics of the passenger compartment.

Preferably the glazing profile further includes a
spacer portion on the peripheral side of the raised

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Att 34

portion, the spacer portion abutting against the mounting flange during installation thereby acting as a stop for the glazing and maintaining the glazing in fixed spaced relationship to the mounting flange. Such a spacer portion ensures that the window may be accurately glazed flush with the surrounding bodywork.

Preferably the raised portion of the glazing profile is adapted to retain the glazing in a centred position while the adhesive used to bond the glazing sets. The need for separate clips, clamps or other supports is thereby eliminated.

According to another aspect of the invention, there is provided a method of glazing a window in a vehicle, including:

providing a glazing including an elastomeric glazing profile disposed on a margin of a face of the glazing around at least part of its periphery, and a mounting flange having an inner edge defining an aperture in a vehicle body,

applying a bead of adhesive material to the glazing or the mounting flange,

offering the glazing to the aperture from outside the vehicle body, including

centring the glazing relative to the aperture as it is inserted,

characterised by centring the glazing by means of a raised portion of the glazing profile shaped and positioned to bear against the inner edge of the mounting flange.

According to a further aspect, the invention also provides a method of centring a glazing relative to an aperture in a vehicle body as herein described, regardless of the means employed to attach the glazing to the vehicle body.

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The invention will now be illustrated by the following description of preferred non-limiting embodiments with reference to the accompanying drawings (all being cross-sections taken in a plane perpendicular to the periphery of the window) in which like reference numerals denote like elements, and:

Fig 1 shows part of a window according to a first embodiment of the invention;

Fig 2 similarly shows part of a window according to a second embodiment of the invention;

Fig 3 corresponds to Fig 1, and shows the glazing of Fig 1 during insertion into the aperture, and before reaching its final position;

Fig 4 shows part of a window according to a third embodiment of the invention;

Fig 5 corresponds to Fig 4, and shows the glazing during insertion into the aperture;

Fig 6 shows a fourth embodiment of the invention;

Fig 7 corresponds to Fig 6, again showing the glazing during insertion.

Fig 8 shows a fifth embodiment of the invention; and

Fig 9 corresponds to Fig 8, showing the glazing during insertion.

Referring to Fig 1, a first embodiment of part of a window according to the invention is shown in cross section. The window comprises a glazing 10 and a mounting flange 5, which is part of the bodywork 3 of a vehicle; the glazing 10 itself including a pane of glazing material 1 and a glazing profile or seal element 11. The pane of glazing material may be composed of any material suitable for a vehicle glazing, e.g. glass or plastics material, and if composed of glass it may be toughened or laminated, bent or flat, and of clear, tinted or coated glass.

The glazing profile 11 may likewise be composed of any suitable polymer e.g. polyurethane, pvc, pvc in plastisol form, or thermoplastic elastomers and may be

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portion 6 of the mounting flange 5, thereby acting as a stop for the glazing and maintaining it in fixed spaced relationship to the mounting flange.

5 Generally the spacer 14 will be of uniform thickness around the glazing to maintain the glazing 10 at a uniform spacing from the mounting flange 5. However, should the depth of the distance portion 9 of the mounting flange vary around the aperture, the thickness of the spacer portion and raised position can also be
10 raised to compensate. Clearly, if the glazing is to be glazed flush with the external bodywork, the combined thickness of the pane 1 and the spacer portion 14 should be approximately equal to the depth of the distance portion 9.

15 The adhesive material 4 employed is generally sufficiently viscous to remain substantially in position after application; however, if the need arises (e.g. if an adhesive material of unusually low viscosity is to be used), the spacer portion 14 may be dimensioned and
20 positioned so that it acts as a dam which constrains the spreading of the adhesive material. The same applies to other spacer portions mentioned hereinafter.

As was mentioned above, in this embodiment, the raised portion of the profile 11 is in the form of a
25 curled lip 12 having a base 15 which extends away from the glazing, the remainder of the lip (comprising the body 16 and the tip 17 of the lip) then curling over towards the mounting flange 5 in the form of a scroll. When suitably proportioned, this shape of raised portion
30 is capable of centring the glazing during insertion, retaining the glazing in position while the adhesive sets (both of which will be explained in more detail in connection with Fig 3 below), and covering the edge 8 of the mounting flange, thereby eliminating the need for a
35 separate trim strip on this edge.

Optionally, the space defined by the lip curling over may be utilised for an auxiliary component, for

Art 34

example, one or more electrical wires or leads 103 may be housed within this space. Such leads may be used to provide electric power to electric equipment on or adjacent the window, such as a heating element disposed on the window, or a window wiper. Safety legislation in some countries now requires a further brake lamp to be provided, mounted on the rear window, and the wiring for such brake lamps may conveniently be concealed within the curl of the lip 12. Alternatively the lead(s) 103 may be used to carry the signal from an antenna mounted on or near the window. Although these leads are only shown in Fig 1, they can of course be included in any of the embodiments of the invention.

After installation of the glazing, a small and uniform gap denoted by arrow Z may remain between the pane 1 and the bodywork 3. If trimless glazing is preferred this gap may be left as it is, or alternatively it may be filled by a separate finishing trim strip 100 to avoid dirt and moisture collecting in the gap, albeit with some loss of flushness. The use of a finishing trim strip is especially preferred when the pane 1 is of laminated glass. Alternatively, the second embodiment may be employed, as will now be described.

Fig 2 shows a second embodiment of the invention, which in many respects is the same as the first embodiment, but in which the glazing 20 includes a modified glazing profile 21. The modified profile includes a "drooping" sealing lip 28, i.e. a short lip on the peripheral side of the profile, which initially extends outwards from the glazing 20, but curves round towards a direction perpendicular to the faces of the glazing. This lip 28 does not centre the glazing during insertion, but merely comes to rest against the vehicle bodywork to seal against ingress of dirt and moisture in a similar way to finishing strip 100.

Preferably the profile 21 also includes a second spacer portion 24 to which the sealing lip 28 is

attached. The curled lip 22, bed portion 23 and spacer portion 24 are equivalent to the corresponding portions of the first embodiment.

Fig 3 shows the glazing 10 of the first embodiment at an intermediate point during insertion into an aperture in a vehicle body. The glazing has yet to move further in the direction of arrow X to reach its final position. The following description of the installation of the glazing is also equally applicable to the second and third embodiments, as it is not affected by the presence or absence of sealing lip 28 and spacer 29.

A bead of adhesive material 4 having been applied to the glazing 10 on the peripheral side of the profile 11, the glazing is offered to the aperture. Outer surface 101 of the curled lip 12 is shaped and positioned so as to make contact with the inner edge 8 of the mounting flange 5; if the glazing is presented off-centre to the aperture, the surface 101 of the curled lip will first contact the inner edge 8 in just one particular location, rather than along the entire length of the lip simultaneously. The lip will bear against the inner edge in this location, and so the glazing will be correspondingly urged away from this location until the lip contacts the edge around the entire length of the lip. When the curled lip is elastically deformed to an equal extent around its entire length by pressure against the edge, the glazing will be centred. The glazing is inserted until the spacer portion 14 (if employed) abuts against the mounting flange, or the glazing is deemed to have been inserted sufficiently far by other means.

Next, the lip 12 is lifted and pulled over edge 8 so that the tip 17 bears against face 19 of the mounting flange as shown in Fig 1. This may be accomplished manually or with a suitable means of pulling the lip over the edge of the flange. A preferred way is to provide a cord 102 within the curled lip 12 (i.e. within the space defined by the curl of the lip); the cord is hooked out

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locally at a convenient place and pulled in the direction of arrow Y (Fig 3). As the cord escapes from the curled lip, it progressively pulls the lip into its final position. Alternatively an elastic metal wire may be provided within the curled lip and used in the same way. The degree to which the lip is lifted during this operation increases from its base to its tip. When electrical leads are housed in the curl of the lip, they should be placed further into the curl, away from the tip 17 of the lip, than the pulling means, so that the pulling means does not accidentally pull the electrical leads out of the curl in the course of pulling the lip over the flange.

Another preferred way is to provide a pulling means as an integral but detachable part of the glazing profile. Figs 4 and 5 show a third embodiment of the invention which is provided with such a pulling means, Fig 5 again showing the glazing at an intermediate point during insertion. The glazing 30 of Figs 4 and 5 includes a profile 31 which is modified by joining a bead 39 to the tip 37 of the curled lip 32 by means of a narrow neck portion 38. The thickness of the neck portion is selected to be strong enough to transmit a sufficient pulling force to the lip to pull it over the edge 8 of the flange 5, but weak enough for the elastomeric material to tear at the neck portion once the lip has been pulled over the mounting flange, thereby causing the bead 39 to detach from the lip. The bead may be pulled manually or with a suitable tool, and the direction of the pulling force is again shown by arrow Y.

Once the glazing is in its final position, the tip 17 of the curled lip 12 exerts a force on the mounting flange as a result of the elastic properties of the lip which is somewhat stretched from its relaxed configuration when in its final position over the flange. This force retains the glazing in place while the adhesive material 4 sets, and indeed retains the lip

itself in place over its service life, during which it may act as part of the internal trim of the vehicle as mentioned elsewhere.

5 Figs 6 and 7 show a fourth embodiment of the invention in which the curled lip and sealing lip of the second embodiment have been united by extending the bed of the glazing profile so that the profile comprises a single piece of the same elastomeric material. As before, Fig 7 shows the glazing 40 at an intermediate point during its insertion into the aperture. The modified profile 41 is made up as follows: a first tongue or sealing lip 48 which initially protrudes in a direction essentially parallel to the surface of the pane of glazing material; a raised portion in the form of a second tongue or lip 42 which, starting from the opposite edge of the profile to the sealing lip, initially protrudes at its base (or root) 45 in a direction essentially perpendicular to the pane 1, the lip again taking on the shape of a curl elastically curving over itself, thereby forming a curled lip 42.

20 The glazing profile 41 also includes a slot or channel A, into which the adhesive material 4 is applied to allow adhesion to the bodywork 3; said channel is bordered by two beads A' and A", with a height of a' and a", respectively, in which the ratio between a' and a" is always greater than one. Both beads act as spacer portions, but it is the height a" of bead A" which is finally determinative of the spacing of the glazing from the parallel portion 6 of the mounting flange 5.

30 The difference in height between A' and A" is equalised when the profile 41 is glued to the bodywork, thanks to the pressure exerted on the higher element A' by the flange 5 of the bodywork 3. In an alternative version of this embodiment, when containment of the adhesive material 4 is less critical, the bead A' may be omitted.

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5 The trim function is achieved when the bodywork 3 and the glazing profile make contact with each other in the area of the channel A by means of the two beads A' and A", that is to say when the glass is glued onto the bodywork 3, by means of the adhesive 4, as shown in Fig 6.

10 The curled lip 42 is then lifted and progressively pulled over the flange due to the effect of traction by elastic metal elements housed inside the curl, until the lip rests on the face 19 of the flange, exerting on said face a pressure sufficient to retain the glazing in position and seal against the flange. For preference, the elastic metal elements are elastic metal wires as shown in Fig 3.

15 With the aim of allowing the necessary elasticity of the lip 42, which must be sufficiently elastic for the tip 47 to rest on the bodywork flange 5 and to exert the desired pressure thereon, but must not exert an elastic return force high enough to roll up upon itself, thus compromising its performance, it has been found that the thickness of the lip 42 must decrease gradually from base to tip so that the section shows three different thicknesses, which are defined as follows:

- 25 b1 = thickness at the base or root 45 of the lip,
 b2 = thickness in the body 46 of the lip, halfway between the base and the tip,
 b3 = thickness at the tip 47 of the lip.

The relationship between the different thicknesses is that:

30 $b1 > b2 > b3$, where the ratio between b2 and b3 is always greater than 1.2 and the ratio between b1 and b2 is preferably greater than 1.5.

35 The overall dimensions of the glazing profile, including the width W which is bonded to the pane of glazing material, are dependent upon various parameters such as the size of the glazing, the strength of the bonds to the pane and to the mounting flange etc.

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is provided as previously described in connection with the first embodiment, thereby ensuring accurate and positive spacing of the glazing from the mounting flange. In a variation of the present embodiment, the spacer
5 portion 54 and the raised portion 52 may be united by a bed portion extending between them, as in the fourth embodiment (Figs 6 and 7).

During insertion of the glazing 50 into the aperture, the first surface 55 contacts and bears against inner
10 edge 8 of the mounting flange 5 as shown in Fig 9. As additional pressure is exerted to urge the glazing further into the aperture in the direction of arrow V, the raised portion 52 is elastically deformed, bending towards the centre of the aperture to allow the apex of
15 the step to slip past the inner edge 8. The net effect of the forces resulting from the angled first surface acting on the inner edge under the externally applied pressure produces an inward force which centres the glazing if it is presented to the aperture off-centre.

Once the glazing is fully inserted, as shown in Fig
20 8, the step 57 and the second surface 56 combine to maintain the centred position of the glazing. Furthermore, the step prevents the glazing from slipping out of the aperture before the adhesive material 4 has set; when used in conjunction with spacer 54, the glazing
25 is retained especially securely in position in all three dimensions.

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Parameter	Value	Unit
Initial concentration	1.0	g/L
Initial pH	7.0	
Temperature	25	°C
Agitation speed	150	rpm
Reaction time	0-120	min
Sampling interval	15	min
Analysis method	UV-Vis	
Wavelength	220	nm
Path length	1	cm
Blank solution	Water	
Calibration curve	$A = 0.0025C$	
Linear range	0-10	mg/L
Detection limit	0.05	mg/L
Recovery	98.5%	
Relative standard deviation	1.2%	
Correlation coefficient	0.999	
Number of replicates	3	
Statistical analysis	t-test	
Significance level	0.05	
Software	SPSS 20.0	

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12. A window as claimed in any one of claims 1 to 5,
wherein the raised portion (52) of the profile includes a
first surface (55) at a first slanting angle to the
mounting flange (5) for initial centring of the glazing
(50) as it is offered into the aperture during
installation, a second surface (56) at a second slanting
angle to the mounting flange for maintaining the centred
position of the glazing after insertion in the aperture,
and a step (57) between the first and second surfaces in
which the inner edge (8) of the mounting flange engages

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to the glazing or the mounting flange, offering the glazing to the aperture from outside the vehicle body, including centring the glazing relative to the aperture as it is inserted, characterised by centring the glazing
5 by means of a raised portion of the glazing profile shaped and positioned to bear against the inner edge of the mounting flange.

24. A method as claimed in claim 23, wherein the raised portion of the profile retains the glazing in position while the adhesive sets.

25. A method as claimed in claim 23 or 24, wherein the raised portion includes a lip, the method additionally including pulling the lip over the mounting flange.

15 26. A method of centring a glazing relative to an
aperture in a vehicle body as claimed in claim 23.

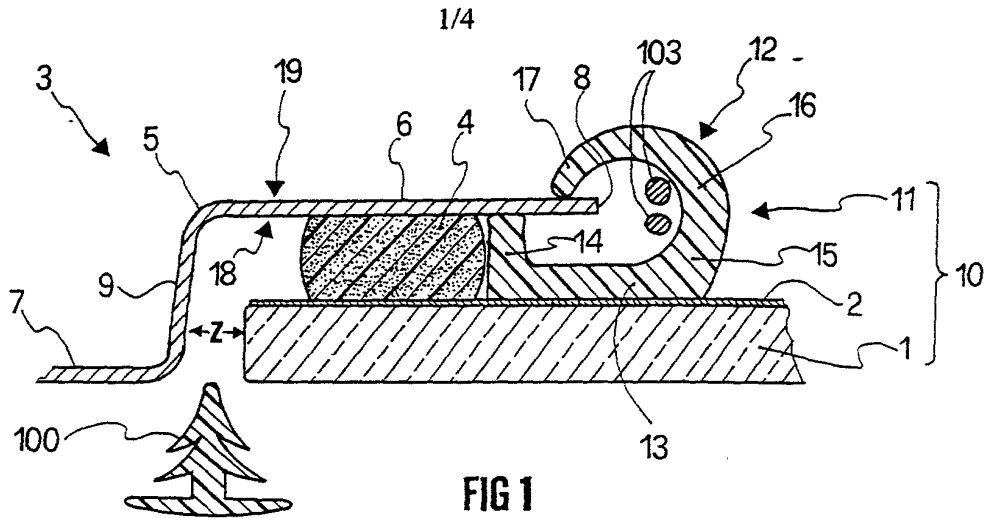


FIG 1

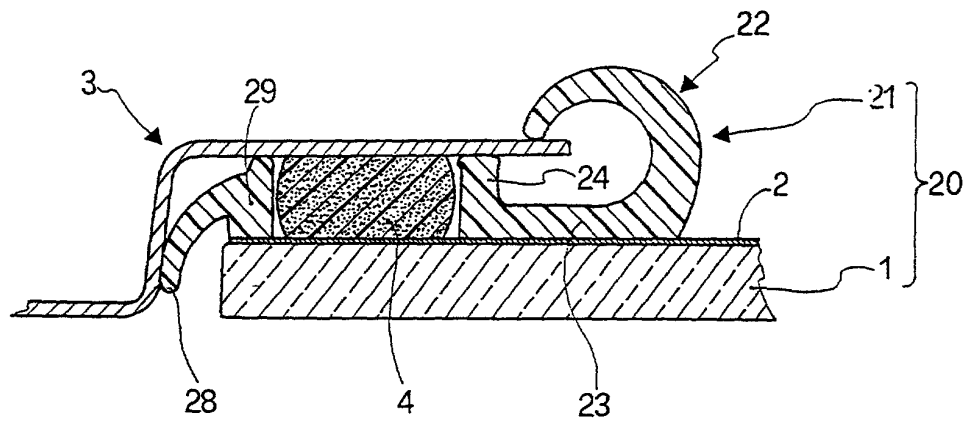


FIG 2

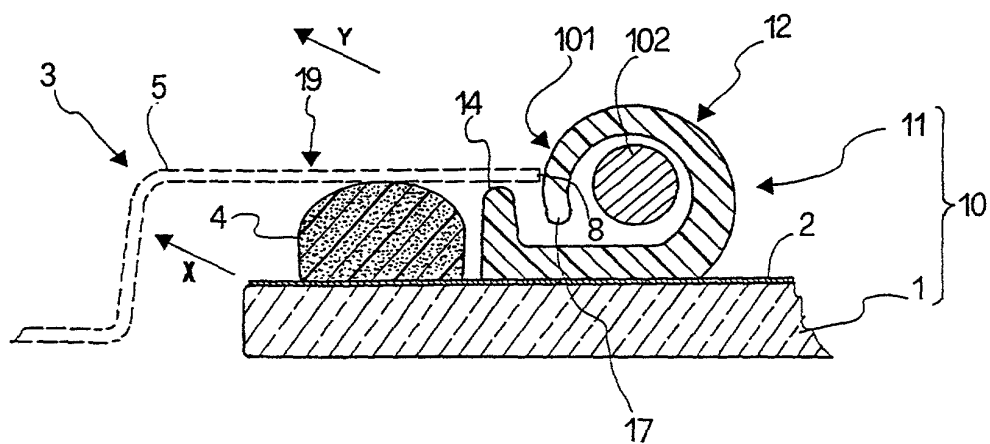


FIG 3

[illegible]

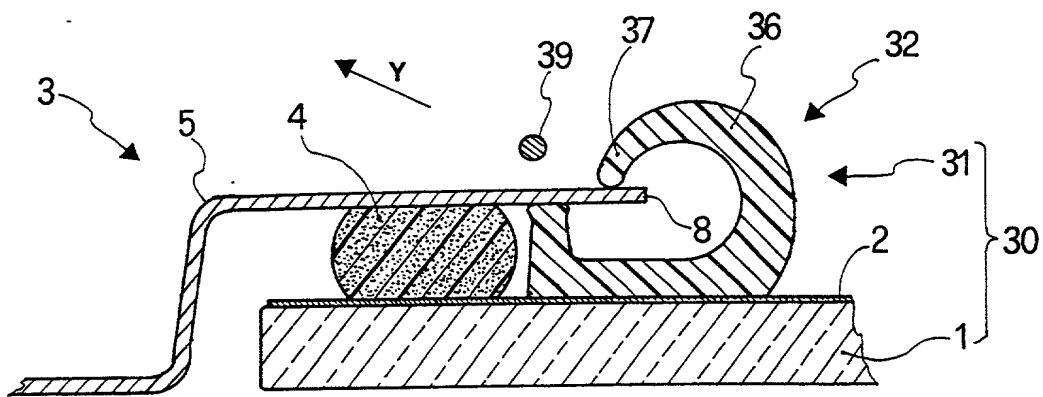


FIG 4

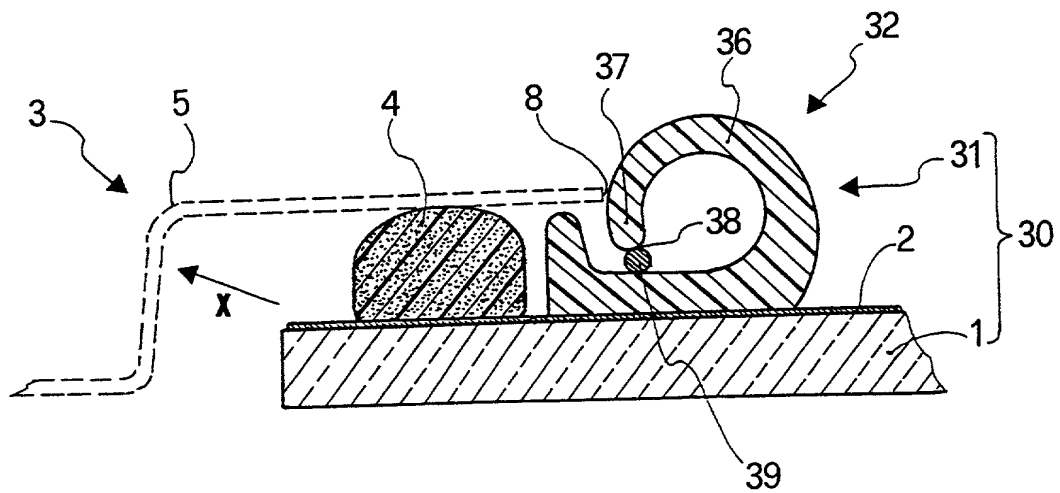


FIG 5

[illegible]

4/4

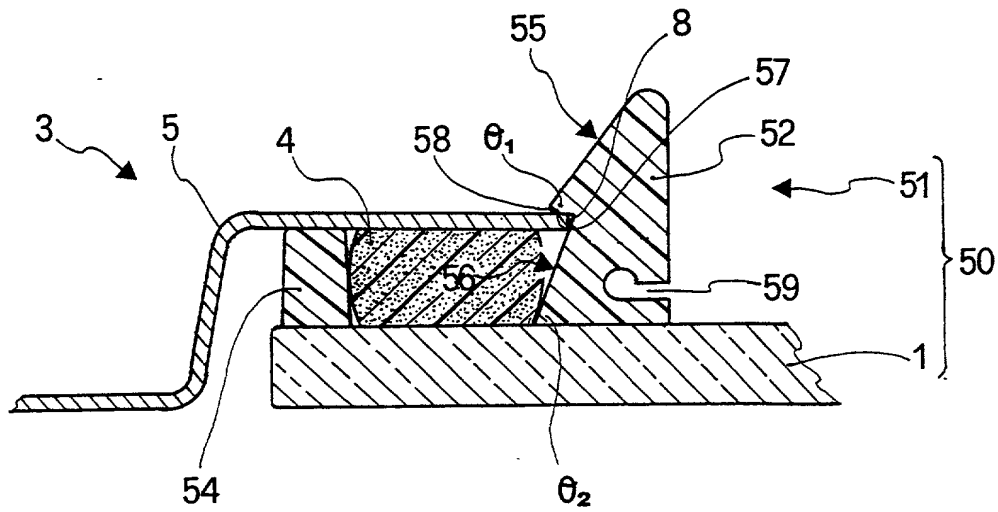


FIG 8

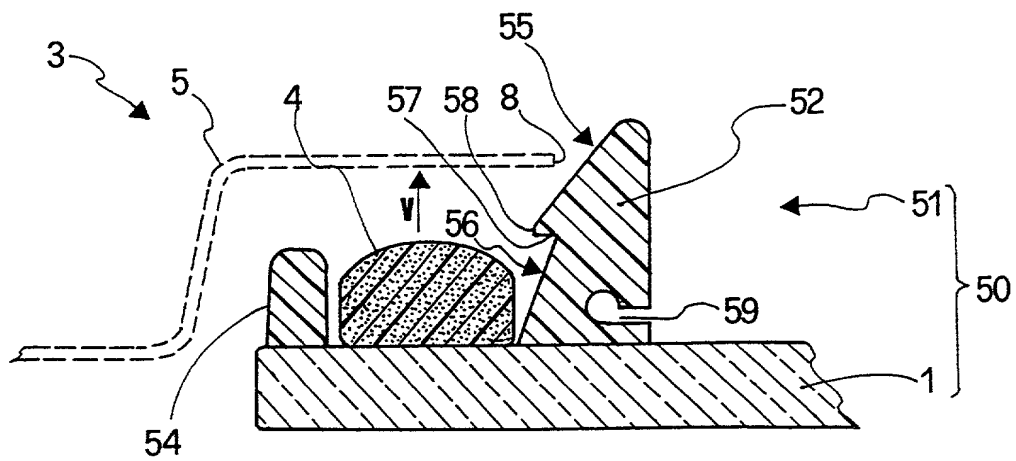


FIG 9

DECLARATION AND POWER OF ATTORNEY FOR U.S. PATENT APPLICATION

() Original () Supplemental (x) Substitute (x) PCT () Design

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Title: WINDOW WITH GLAZING PROFILE

of which is described and claimed in:

() the attached specification, or

() the specification in the application Serial No. _____, filed _____, and with amendments through _____ (if applicable), or

(x) the specification in International Application No. PCT/IT96/00202, filed 4 November 1996, and as amended on _____ (if applicable).

I hereby state that I have reviewed and understand the content of the above-identified specification, including the claims, as amended by any amendment(s) referred to above.

I acknowledge my duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim priority benefits under Title 35, United States Code, §119 (and §172 if this application is for a Design) of any application(s) for patent or inventor's certificate listed below and have also identified below any application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NO.	DATE OF FILING	PRIORITY CLAIMED
Italy	RM95U000236	6 November 1995	Yes

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	U.S. FILING DATE	STATUS: PATENTED, PENDING, ABANDONED

1126 - 5 months
11/2/96
Pat. 11/2/96

DECLARATION AND POWER OF ATTORNEY FOR U.S. PATENT APPLICATION

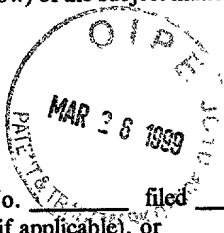
☐ Original ☐ Supplemental ☒ Substitute ☒ PCT ☐ Design

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Title: WINDOW WITH GLAZING PROFILE

of which is described and claimed in:

- ☐ the attached specification, or
☐ the specification in the application Serial No. _____ filed _____;
and with amendments through _____ (if applicable), or
☒ the specification in International Application No. PCT/IT96/00202, filed 4 November 1996, and as amended
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APPLICATION SERIAL NO.	U.S. FILING DATE	STATUS: PATENTED, PENDING, ABANDONED

And I hereby appoint John T. Miller, Reg. No. 21,120; Michael R. Davis, Reg. No. 25,134; Matthew M. Jacob, Reg. No. 25,154; Jeffrey Nolton, Reg. No. 25,408; Warren M. Cheek, Jr., Reg. No. 33,367; Nils E. Pedersen, Reg. No. 33,145; and, Charles R. Watts, Reg. No. 33,142, who together constitute the firm of WENDEROTH, LIND & PONACK, L.L.P., jointly and severally, attorneys to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith.

I hereby authorize the U.S. attorneys named herein to accept and follow instructions from Societa Italiana Brevetti as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and myself. In the event of a change in the persons from whom instructions may be taken, the U.S. attorneys named herein will be so notified by me.

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Post Office Address	ADDRESS	CITY	STATE OR COUNTRY ZIP CODE

090629-00000000

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Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY ZIP CODE

I further declare that all statements made herein of my own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

1st Inventor _____ Date _____
Udo NOBEL Mr Robert Frost Date 25th February 1999
2nd Inventor _____
Mark Robert FROST
3rd Inventor _____ Date _____
4th Inventor _____ Date _____
5th Inventor _____ Date _____
6th Inventor _____ Date _____
7th Inventor _____ Date _____

The above application may be more particularly identified as follows:

U.S. Application Serial No. 09/068,238 Filing Date May 6, 1998
Applicant Reference Number RM/X89029/IN-AB/ma Atty Docket No. 766/X89029/IN-AB/ma
Title of Invention WINDOW WITH GLAZING PROFILE

Full Name of Fifth Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
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Full Name of Sixth Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
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1st Inventor Udo NOBEL Date 23.02.98
2nd Inventor Mark Robert FROST Date _____
3rd Inventor _____ Date _____
4th Inventor _____ Date _____
5th Inventor _____ Date _____
6th Inventor _____ Date _____
7th Inventor _____ Date _____

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